

Enabling Works Strategy

Introduction

This strategy has been prepared jointly by AJP engineers and the LK Group environmental consultancy. It sets out a strategy for the proposed enabling works to be undertaken in advance of the commencement of development to construct a proposed 15 storey building, known as M1 Piccadilly. As the detailed design progresses and as specialist piling and building contractors are signed to the project, further detail in an Enabling Works Package will be developed. It is expected that such detail will be required as a condition to any planning consent granted for the proposed building.

Background

The site is located at National Grid Reference 384986E 398076N and covers an area of approximately 0.07 hectares. The site is currently undeveloped and has been cleared of vegetation. The site slopes from Piccadilly Village towards the north where a retaining wall exists between the Store Street footpath and the site.

The site is underlain by Chester Formation (sandstone) overlain by Till. Nearby borehole logs indicated >9.45m of clay which is also stated in the Preliminary Risk Assessment as previously submitted. The site is not within a coal mining risk referral area.

Temporary Access Works

Prior to site investigation works taking place, temporary works to the site boundary and the construction of a platform around the development perimeter will need to be installed by a specialist contractor. Edge restraint would also need to be installed above the retaining wall to protect any falls from height, however this would be included in the specialist contractors package prior to site investigation works commencing.

It is likely that any site investigation equipment would need to be craned from Store Street over the retaining wall to the working platform where locations could be set up. Relevant Council permissions would be obtained to temporally close the footpath and parking bays on the site side of Store Street for this purpose.

Site Investigation

The site investigation would initially include 4no. trial pits to assess the made ground behind the retaining wall with soil samples analysed to allow for a reduced dig and the disposal of soils at landfill during the next phases of enabling works.

The next stage of investigation would be to complete 3no. cable percussion boreholes with 6m of follow on rotary coring into the bedrock. This will include in-situ and laboratory geotechnical testing of soil and rock samples. SPT's will be undertaken at approximately 1m intervals and a maximum of 6 undisturbed samples collected for multi-stage triaxial tests. Rock cores will be logged and samples selected for point load, compression strength and density testing.

Following the site investigation phase, we would also look to carry out groundwater and gas monitoring for a period of 3 months if deemed necessary.

Prior to the above scope being finalised, we would look to discuss and agree the specification with Manchester City Council and any piling contractor that is to be appointed by the client.

Perimeter Retaining

The site investigation report is required to finalise all substructure design proposals. One potential option to retain and support the existing surrounding structures is to install a perimeter contiguous/secant embedded piled retaining wall. The temporary access works described above should be designed as a tracked vehicle working platform to accommodate a piling rig, and set to a level suitable for the retaining wall installation. The method of access for the piling operation is to be developed but could include some elements being lifted/craned into location from Store Street and some elements utilising access ramps through the centre of the development, this would require a section of the existing retaining wall at the back of Store Street footpath to be removed.

The augured replacement piled wall installation method (CFA or rotary) provides the lowest vibration levels and disruption to the surrounding structures. Due to the location and level of the surrounding structures beyond the development legal boundary, party wall agreements could be required where engineering assurance/approval by adjacent land owners will be required, the design of the retaining walls will also be subject to building control and possibly warranty provider design approval. To the North East of the development site is an existing canal/bridge/aqueduct structure. As the development site boundary is approximately 25m away from the nearest piece of existing canal structure, the new development will not cause structural deformation to the existing canal structure.

Development Substructure

Once the self-supporting perimeter retaining wall described above has been completed, the bulk excavation within the legal boundary can progress to allow the substructure for the proposed new development to be constructed in a normal construction sequence.

